



BASE Line

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The magnitude 9.0 Tohoku earthquake and tsunami on March 11, 2011 has transfixed the world on the destruction and human toll in Japan. The earthquake and tsunami waves of up to 124 feet have resulted in over 10,000 deaths while over 17,000 people are still missing. One can only imagine how many more casualties there could have been if Japan did not have a culture of strict building codes, hazard education and infrastructure investment. Our hearts and sympathies go out to the people of Japan as they recover and rebuild their nation.

BASE has long been involved in the advancement of the design of buildings to mitigate the impact of natural and manmade disasters. BASE has been involved in the development of the following reports and publications that guide designers to create more disaster resilient communities.

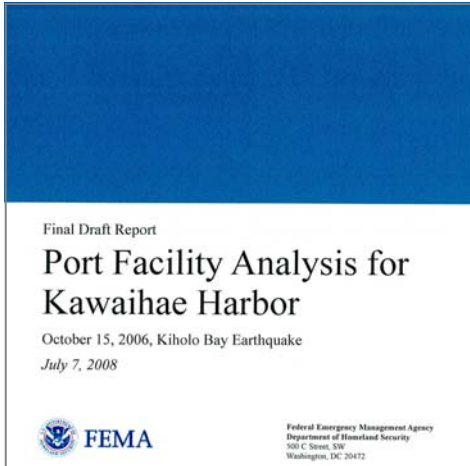
- *Design of Structures for Vertical Evacuation from Tsunamis: State of the Art Report and Preliminary Recommendations.* This report provides guidance for the design and construction of tsunami-resistant structures allowing for vertical evacuation.
- *Port Facility Analysis for Kawaihae Harbor.* A case study of the 2006 Kiholo earthquake on the Island of Hawaii.
- *Report to NIST (National Institute of Standards & Technology): Engineering Design and Cost Data for Reinforced Concrete Buildings for Next Generation Design and Economic Standards for Structural Integrity.* This study provides project stakeholders a means for analyzing performance benefits of design or retrofit options that reduce the potential for progressive collapse.
- Publication of Prevention of Progressive Collapse in Multistory Concrete Buildings, SCI/ICC. A manual that provides a comprehensive discussion of GSA and DoD requirements.

Haiti was BASE's most recent response to catastrophe; however, Baldrige and his BASE employees have also lent their expertise to past natural disasters and have received training in urban search and rescue.

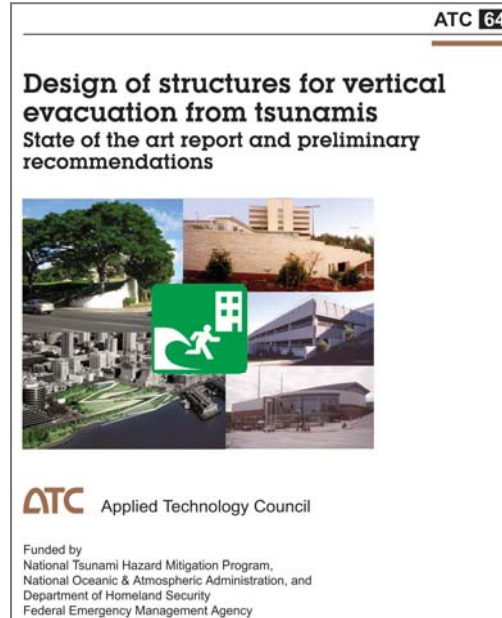
- After the devastating earthquake and tsunami that struck Samoa in September 2009, Baldrige volunteered his time and expertise investigating structural damage for the EERI.
- BASE volunteered staff for one week on the Big Island to assess the damage caused by the Kiholo Bay earthquake in October 2006 has played a key role in the Structural Engineers Association of Hawaii Disaster Response Committee.

BASE and its dedicated employees are committed to ensuring public safety by not only advancing the design of disaster resilient structures, but also by volunteering their knowledge and capabilities in providing assistance in emergency response.





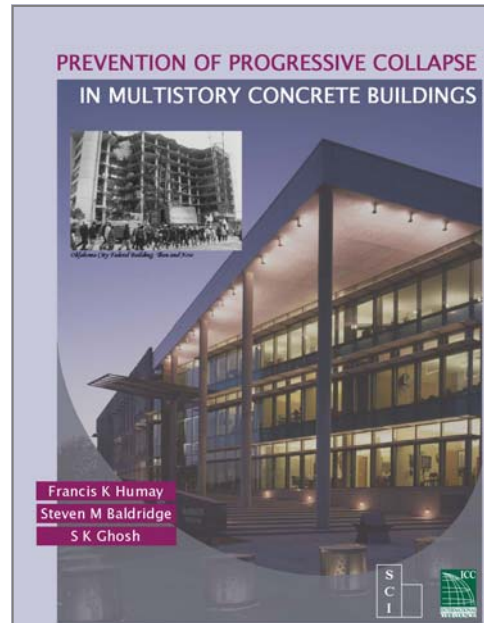
This report is both a case study of the 2006 earthquake and its effects on the infrastructure and operations of Kawaihae Harbor. It is to be used as technical guidance for seismic mitigation and preparation of the Pacific Island port facilities.



This project provides technical criteria, design guidance, and recommendations for design and construction of tsunami-resistant structures that would allow for vertical evacuation from tsunami inundation.



This study is intended to provide stakeholders with a means for analyzing performance benefits of design or retrofit options that reduce the potential for progressive (disproportionate) collapse based on GSA guidelines against the cost of implementation of those options.



This publication provides a comprehensive discussion of the GSA and DoD requirements along with several complete design examples. While this manual is intended primarily for practicing engineers, it is also a valuable aid to students, educators, regulators, and those involved in the design, construction, and approval of buildings.